



## COLORS IN DESCRIPTIVE ART

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### ABSTRACT

The article is intended for those who work and study in the field of fine and applied arts, to determine the basic characteristics of achromatic and chromatic colors, the study of additive and subtractive synthesis methods, spectral characteristics, color whiteness and color instability.

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### Introduction

Our lives are full of colors. We see our surroundings, the whole world in color. We are so accustomed to blue skies, green meadows, red, yellow, white, and black cars that we forget that color is actually a subjective interpretation of electromagnetic radiation in the optical range. Color is the wave of light that our eyes perceive, and we see it differently depending on its length.

The word "color" is known to be derived from Persian. In addition, many colors have Persian names: "blue", "purple", "pink", "red", "brown", "pink", "black", "blue" (Arabic core); Although the first component of "gray" is the root word "gray", the compound structure suggests that it appeared in later times, under the influence of Persian culture.

Color is one of the hallmarks of the objects we see, and it exists in the form of visual sensations perceived in memory. Sight plays a crucial role in a person's understanding of the environment. Color vision allows you to clearly distinguish the objects of the material world from others and to fully understand their properties. It is known that 90% of information is received through the sense of sight. It is not for nothing that people say, "It is

better to see once than to hear ten times." In general, color is one of the main problems of philosophy, which considers the understanding of the material world by man. From ancient times the people had their own ideas about color. This is evidenced, for example, by the fact that cavemen decorated their huts with colored minerals mined from the ground. Mineral pigments and 30 different natural dyes have been used as the only dyes for hundreds of years. Synthetic dyes have been produced since 1956 and now number more than 5,000. The increase in the number of dyes has led to the need to understand the quantitative and qualitative methods of color characteristics. However, no physical device has yet been developed to quantify color, and the only way to characterize a color is to compare different color samples with a standard. Only in the twentieth century did color science rise to the level of science, now from the basic methods of color measurement in various fields of science and industry, including lighting, signaling in all modes of transport, photography, television, aniline dye, textiles, printing and used in the chemical industry. The key to working with color is to know the mechanism of color addition and how to perceive it.

Color is the ability of a substance to produce a specific sense of light according to the spectrum of light it emits or reflects. The light energy of the radiation returns from the surrounding objects and enters the sensitive cell receptor membrane of the eye through the pupil of the eye and actively affects it. Matter emits light of the same color as it absorbs it. The color spectrum can vary depending on the properties of the atoms and molecules that make up the substance. When the energy densities of the rays that make up the spectrum are close to each other, white is formed. As a result of reduced brightness or illumination, the color of the substances becomes indistinct.

You can create any color by combining three different colors. According to the international agreement, 3 primary colors are selected: red, green and air color. Color TV, color photography, and more are based on a mix of 3 different colors. Light with different wavelengths  $\lambda$  gives the impression of different colors:  $\lambda = 460$  nm - purple, 470 nm - blue, 480 nm - blue, 520 nm - green, 580 nm - yellow, color, orange at 600 nm, red at 640 nm, and dark red at 700 nm.

Some people have color blindness. In this disease, black-and-white images and traffic lights look the same as color images. When it is not possible to directly determine the temperature of a substance, a change in color in the emission spectrum is used. The surface temperature of the Sun was determined by this method. In Kime's experiments, special optical instruments (spectrophotometers) are used to determine the concentration (color) of the solute.

The source of light in nature is the sun, and its light is a very complex light. In his laboratory, British scientist Isaac Newton is experimenting for the first time by passing sunlight through a triangular glass prism and observing how it appears on the screen in several colors. The scientist sent sunlight through a small hole in a dark room and found that spectral colors are formed on the surface of the screen when light passes through a three-sided glass prism. The least broken bottom of the colors formed on the surface of screen 9 is red, and the most broken is purple, in the range of which there is no definite boundary between the stripes of color, any color gradually changes and sees the placement of a strip of orange, yellow, green, air color, blue colors that change to a different color tone.

The colors available in nature can be divided into two parts: achromatic and chromatic colors. Achromatic colors are the shades of white, gray, and black, as well as all the colors that come from mixing them in different proportions. Achromatic colors are not present in the spectrum.

If we cut a circle out of cardboard and paint it in red, orange, yellow, green, air, blue, in the order of the spectral colors, we put it on the axis of the fan. If we rotate quickly around the *qi*, we see a gray hue in the

general view. In the same way, when we rotate the three primary colors, red, yellow, and blue, we get a brighter light gray. When we mix these seven different colors in a palette, we get a dark, unobtrusive mixture.

The difference between achromatic colors and chromatic colors is that they have selective absorption and return properties. All colors except achromatic colors, that is, colors that have a certain color, are included in chromatic colors. Each chromatic color has three properties: hue, color brightness (i.e., more or less brightness), and color intensity (i.e., color intensity).

If we look closely at the spectrum, we can see the similarities between the red and purple colors at the very edges. When the two colors are mixed together, red is formed between them.

There can be many shades of color, but our eyes can distinguish up to 150.

Cold colors include ice, water, sky blue, blue, purple, air, dark green, and blue-red. Natural colors can be further divided into warm and cool colors. The 10 warm colors include yellow, orange, red, and yellow-green, reminiscent of the sun, flames, and hot iron taffeta.

In short, color can be a factor that has a negative and positive effect on the human mind. There are 3 main colors in life, and when they combine, other colors are formed.

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